

CLAIMS

1. The use of an enterobacterium OmpA protein, or of a fragment thereof, associated with the peptide of sequence SEQ ID No. 3 ELAGIGILTV, for preparing a pharmaceutical composition intended to generate a cytotoxic T response directed against melanoma cells.
2. The use of an enterobacterium OmpA protein, or of a fragment thereof, associated with the peptide of sequence SEQ ID No. 3, as claimed in claim 1, for preparing a pharmaceutical composition intended for treating or preventing malignant melanomas.
3. The use as claimed in claim 1 or 2, characterized in that said enterobacterium OmpA protein, or a fragment thereof, is obtained using a method of extraction from a culture of said enterobacterium.
4. The use as claimed in claim 1 or 2, characterized in that said enterobacterium OmpA protein, or a fragment thereof, is obtained via the recombinant route.
5. The use as claimed in one of claims 1 to 4, characterized in that said enterobacterium is *Klebsiella pneumoniae*.
6. The use as claimed in claim 5, characterized in that the amino acid sequence of said OmpA protein, or a fragment thereof, comprises:
- a) the amino acid sequence of sequence SEQ ID No. 2;
 - b) the amino acid sequence of a sequence having at least 80% homology with the sequence SEQ ID No. 2;
- or

c) the amino acid sequence of a fragment of at least 5 amino acids of a sequence as defined in a).

7. The use as claimed in one of claims 1 to 6, characterized in that said peptide of sequence SEQ ID No. 3 is coupled to or mixed with said OmpA protein or a fragment thereof.
8. The use as claimed in claim 6, characterized in that said peptide of sequence SEQ ID No. 3 is coupled, by covalent attachment, with said OmpA protein or a fragment thereof.
9. The use as claimed in claim 8, characterized in that the coupling by covalent attachment is coupling produced by chemical synthesis.
10. The use as claimed in claim 9, characterized in that one or more attachment elements is(are) introduced into said OmpA protein, or a fragment thereof, and/or into said peptide of sequence SEQ ID No. 3, in order to facilitate the chemical coupling.
11. The use as claimed in claim 10, characterized in that said attachment element introduced is an amino acid.
12. The use as claimed in claim 8, characterized in that the hybrid protein resulting from the coupling between said peptide of sequence SEQ ID No. 3 and said OmpA protein, or a fragment thereof, is obtained by genetic recombination.
13. The use as claimed in claim 12, characterized in that the pharmaceutical composition comprises a nucleic acid construct encoding said hybrid protein.

14. The use as claimed in claim 13, characterized in that said nucleic acid construct is contained in a vector, or in a transformed host cell capable of expressing said hybrid protein.
- 5 15. The use as claimed in one of claims 1 to 14, for preparing a pharmaceutical composition which can be administered by the subcutaneous or intradermal route.
- 10 16. The use as claimed in one of claims 1 to 15, characterized in that said pharmaceutical composition is vehicled in a form which makes it possible to improve its stability and/or its immunogenicity.
- 15 17. A pharmaceutical composition as defined in any one of claims 1 to 16.
- 20 18. The pharmaceutical composition as claimed in claim 17, characterized in that it comprises the *Klebsiella pneumoniae* OmpA protein of sequence SEQ ID No. 2, a protein, the sequence of which has at least 80% homology with the sequence SEQ ID No. 2, or a fragment of at least 5 amino acids of said OmpA protein of sequence SEQ ID No. 2, associated, by mixing or by coupling, with the peptide of sequence SEQ ID No. 3.
- 25 19. A pharmaceutical composition, characterized in that it comprises a nucleic acid construct containing a nucleic acid encoding the *Klebsiella pneumoniae* OmpA protein of sequence SEQ ID No. 2, a protein, the sequence of which has at least 80% homology with sequence SEQ ID No. 2, or a fragment of at least 5 amino acids of said OmpA protein of sequence SEQ ID No. 2, and a nucleic acid encoding the peptide of sequence SEQ ID No. 3.
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- 5 20. The composition as claimed in one of ~~claims 17 to 19~~, characterized in that said pharmaceutical composition is vehicled in a form which makes it possible to improve its stability and/or its immunogenicity.
- 10 21. The composition as claimed in ~~claim 20~~, characterized in that said vehicle is a liposome, or a viral vector or a transformed host cell capable of expressing said OmpA protein, or a fragment thereof, and said peptide of sequence SEQ ID No. 3.
- 15 22. The composition as claimed in one of ~~claims 17 to 21~~, characterized in that said composition is contained in a pharmaceutically acceptable medium.
- 20 23. The composition as claimed in one of ~~claims 17 to 22~~, characterized in that said composition also contains a detergent.
24. The composition as claimed in one of ~~claims 17 to 23~~, without any other adjuvant for inducing a CTL response.

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